

AMENDMENTS TO THE DRAWINGS

Fig. 2 is amended to conform to the specification, specifically Par.0052 of the published application, that describes a "monolithic aluminum structure." Thus the regions defined by 3 should not include a solid line extending perpendicular through panel 1 to interior surface 2.

Attachment: Replacement Sheets

REMARKS

Claims 1-6, 1, 12, and 15-17 are pending. By this Amendment, claims 2 and 16 are cancelled, claims 1, 3-5, 11-12, and 17 are amended, and new claim 18 is added.

Applicant respectfully acknowledges the Examiner's assistance regarding clarification of Figure 2 during a teleconference conducted on May 30, 2006. Discussion was had regarding the meaning of "strips" and "strip junction" based on the figures presented and the prior art. No agreement was reached as to allowable claims. Applicant will submit an Interview Summary if so directed by the Examiner.

Rejections based on 35 USC §103(a)

With regard to the obviousness rejections, the Examiner objects to claims 1-5, 11, 12, 15, 16, and 17 as being unpatentable over GB 195,686 (Booth). The Applicant respectfully traverses this rejection. Booth only deals with a wooden skin made from separate strips laid edge-to-edge. Both literally, and conceptually, the wing skin of the present invention is entirely different to this multi-component wooden structure.

The Examiner suggests, based on Booth, that it would have been obvious to one of ordinary skill in the art to make the wooden strips of metal. Applicant traverses this characterization as an over-simplification. The tongue and groove arrangement of Booth would be entirely unsuitable for use with a metal structure; metal is much harder than wood and would require unduly accurate manufacturing tolerances. Furthermore, Booth is directed to an arrangement in which discrete strips bend and conform to the varying curved surface of an aircraft frame (see page2, lines 5 to 19). One of ordinary skill in the art would not consider metal, which is generally less flexible than wood, for such an application. The techniques taught

by Booth apply only to wooden wing structures; it would not be practical to simply replace the wooden strips used by Booth with ones of metal. To suggest making the wooden strips of Booth from metal, would change the principle of operation of the invention of Booth and cannot therefore form the basis of a rejection under 103(a) (see MPEP 2143.01 VI).

An entire aircraft wing skin is typically formed from several, large, discrete wing skin panels. For the avoidance of doubt, it is to at least these wing skin panels that the claims of the present application are directed (see paragraph 0008 of the specification as published) and not necessarily the entire wing skin. Broadly speaking, the present invention relates to an integrally formed (single piece) metal wing skin panel having one face which has been machined so as to have a multiplicity of elongate sections running along its length. The elongate sections are clearly shown in Figures 2, 3 and 5. The provision of elongate sections mitigates the need to divide the panel into many facets and can allow a significant reduction in design and manufacturing time (the Examiner's attention is drawn to paragraph 0007 of the specification as published in particular). Importantly, the elongate sections are integrally formed with the wing skin. By way of comparison, the collection of strips shown in Figure 4 of Booth is clearly not a monolithic structure as it comprises five discrete components. Thus, Booth does not support the obviousness rejections of claims 1-5, 11, 12, 15, 16, and 17. Nevertheless, solely to advance prosecution of the present application, and without any waiver or disclaimer of subject matter, independent claims 1, 11, 12, and 17 have been amended to explicitly recite the feature of a monolithic wing skin having a multiplicity of thicknesses.

With regard to claim 4, the Examiner claims that Booth discloses in Figures 4 and 5 the elongate section junctions of the present invention. Applicant respectfully traverses. Broadly

speaking, subject-matter of claim 4 relates to the elongate section junctions (4a, 4b) shown in Figure 3 and described in paragraphs 0054 and 0055 of the specification as published. The junctions are each arranged to receive a rib foot of a single rib extending along the wing skin. Each junction is thus parallel to the first (external) surface and to the portion of a rib foot which it receives. This greatly simplifies the manufacturing of the wing box and particularly of the interface between the rib and the wing skin. Claim 4 has been amended to further define this relationship.

With regard to claim 17, the Examiner believes it would have been obvious to make the step between the elongate sections have a maximum gradient of less than 1:1. However, the strips of Booth are wooden and one of ordinary skill in the art would not even begin to consider modifying the wooden strips so that the step between two adjacent strips is anything other than a sharp, step change, let alone a maximum gradient of less than 1:1. The nature of wood (in particular its fibrous grain structure and poor machineability) makes it entirely unsuitable for such an arrangement. Furthermore, to attempt to create the above-mentioned gradient of less than 1:1 between strips, it would be necessary to perform special carpentry techniques. For example, it may be necessary to chisel, sand and/or rout the step between the strips. Booth provides absolutely no suggestion of performing such a step. It is submitted that the subject-matter of claim 17 is therefore inventive and patentable.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

A handwritten signature in black ink that reads "Thomas G. Dickson". The signature is written in a cursive style with a large, looped 'T' and a distinct 'D'.

Thomas G. Dickson
Registration No. 51,616

Customer No. 24113
Patterson, Thunte, Skaar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 349-3004

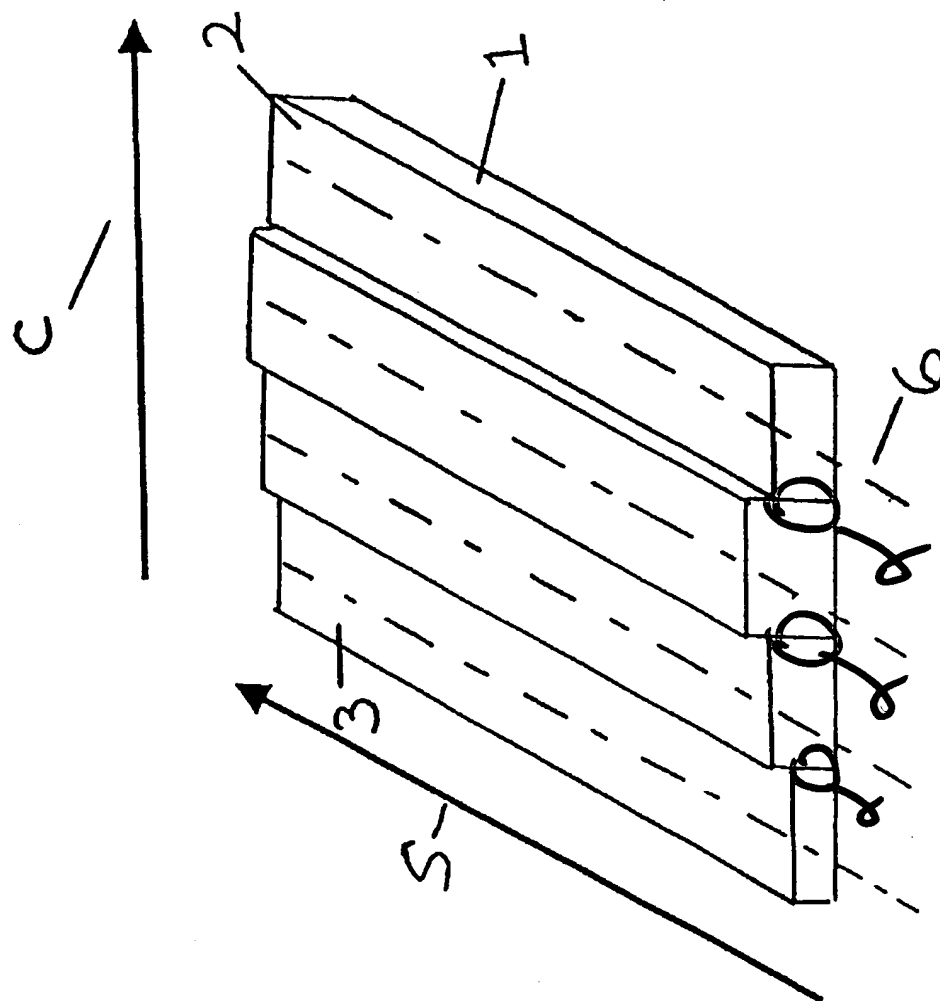


Fig. 2